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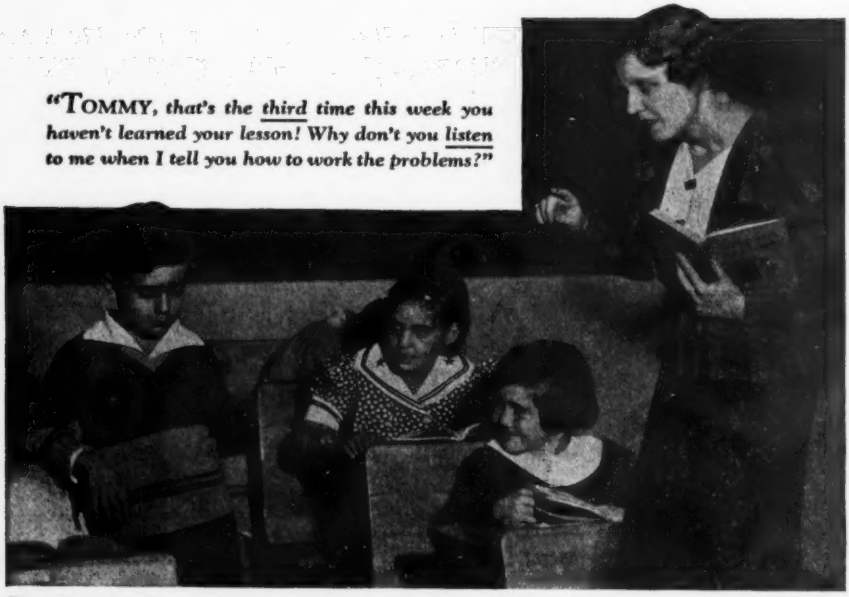

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THE JOURNAL OF SCHOOL HEALTH

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Vol. XIV SEPTEMBER, 1944 No. 7

SHALL THE SCHOOLS BE OPEN OR CLOSED DURING AN EPIDEMIC OF CONTAGIOUS DISEASE?

CHARLES B. LEWIS, M.D.

Director Health and Physical Education, Public Schools, Providence, Rhode Island

Shall the schools be open or closed during an epidemic of contagious disease? It would be more appropriate, perhaps, to discuss the subject—What should the schools do in order to justify their remaining open during an epidemic? or What should be the health procedures in the schools to avoid their closing during an epidemic of contagious disease? It will be my purpose to set forth the reasons why the schools should remain open and what makes this possible.

State, city, and school health officials, including the best-known authors on public health matters, are in agreement that in most communities the schools should be open during an epidemic of contagious disease. It may be necessary, where the conditions warrant such action, to close, perhaps, one room, or a group of rooms, or even a school in a district. On occasions, as in 1918 when influenza was pandemic, or in 1933 when infantile paralysis prevailed, schools may be closed or their opening postponed. In general, however, reputable authorities* believe that more effective control of contagious disease is assured when the schools are open and the children are under the daily supervision of teachers, nurses, and physicians.

In private schools, as contrasted with public, the policy of keeping open or closed depends on several factors, including the desires of the parents, the degree to which a particular school is able to protect its pupils, the likelihood of additional cases occurring and the type of the disease. Obviously, very strict measures are desirable with cases such as diphtheria, and scarlet fever. It may be stated that the spread of diphtheria is remote if a high percentage of the children have been inoculated against the disease.

In the smaller communities, where the chances for personal contact are limited because of scattered homes, and where pupils

* Suggested School Health Policies. American Medical Association, 1941.

are transported in buses and close contact is unavoidable, it may be desirable to close the schools.

In the preparation of this article, correspondence was entered into with prominent state, city and school health officials. Some of their replies follow: Dr. W. W. Bauer, Bureau of Health Education, American Medical Association states, "if the schools have not yet opened for the season and there is an epidemic of some proportions of a serious disease, such as infantile paralysis, of which the epidemiology is not thoroughly understood, it may be wise to postpone the opening of schools for a few weeks, partly for the purpose of controlling the disease but at least as much, if not more, for the purpose of allaying apprehension."

Dr. Bauer further states, "Presuming that the schools remain open and that there is adequate supervision by teachers, nurses and physicians, several advantages are gained. First, the children are in a definite place every day where they can be observed, instead of scattered all over town in movies, theaters, playgrounds, neighborhood groups, street-cars, buses, etc., where they make unsupervised contacts over a much wider area than is embraced in the routine attendance at school. Since the children can be observed, incipient illness is detected and early exclusion is made promptly and can be followed-up quickly, with quarantine if necessary. The schools, in other words, become an epidemiological weapon, useful both in recognition and control of the situation."

According to Dr. Thomas A. Story, former Special Consultant, American Social Hygiene Association, "A school in which competent teachers are employed who are keenly observant of the signs and symptoms of illness among their pupils, and a school that is equipped with competent school physicians and nurses form a combination that under normal circumstances gives the children in the school the best protection possible during an epidemic of contagious disease."

Dr. K. K. Musson, Department of Health, Chicago, points out, 'Theoretically, the possibility of exposure to communicable diseases is greater in the school room, where the contact is closer. In practice, however, to close the schools does not break this contact because many of the diseases of childhood are most communicable in the early stages before it is possible to make a diagnosis. As an administrative procedure, it is sometimes advisable for the school authorities to close the school on account of a low attendance rate in the presence of an epidemic. This is not a factor in the control of a disease, however."

Dr. Charles Smith, Health Officer, Denver, Colorado, writes, "The only time, in my opinion, that the schools must be closed under such conditions would be when the teaching staff was so depleted by illness that the children could not be taken care of properly."

Dr. Bennett L. Richardson, Superintendent Rhode Island Hospital, Providence, Rhode Island, states, "I think that not the least of the advantages of keeping schools open is the educational value for the children and parents. They learn something about how different diseases should be handled in the school and how the children should be cared for. This helps to enlist their co-operation in the prevention of infectious diseases which may be contracted not only in the school but also elsewhere in the community."

Dr. Hiram A. Jones, Director of Health and Physical Education, State Education Department, Albany, New York, in the following comprehensive statement offers reasons for keeping the schools open.

"School Open	School Closed
Reassuring to community	Psychologically disturbing
Restricts assemblage	No restriction
Illness absence checked and investigated daily	Number of illness absence cases undetermined
Daily supervision of child present in school	No assurance of supervision of most children
Congregation limited — contacts known and available for supervision	Children congregate on playgrounds, streets, at movies, Sunday school, etc.
Opportunity for check-up on contacts	Contacts unknown and unavailable
Travel restricted in families where there are children in school	Travel and communication unrestricted and increased
Infected areas isolated	Infected areas spread disease through travel to uninfected areas."

Every effort should be made to have the school a Health Center. The school, from its very nature, is completely constituted to act as a disease center, an assembler and distributor of children's diseases in the community. Efficient application of the best knowledge of disease prevention is indispensible to the task of making the school a successful center of health control and health influence. Some of our best authorities believe that the chance of the child for life and health depends as much, perhaps even more, upon protec-

tion against certain infections and contagious disease than upon the care and promotion of personal health.

The control of contagious disease is necessary in a school system because the occurrence of disease will be decreased and lives will be saved; the health of the pupils will be improved markedly, since many will avoid the danger and discomforts of serious illnesses; attendance will likely be increased, especially if the possibility of epidemics is considered; and the school will thus be made safer for pupils and teachers alike.

The chief duty in the school's disease-control program is to foster in parents, teachers, and other adults a social conscience and responsibility for the control and prevention of disease in schools. Such intelligent understanding and consciousness should find practical expression in the inspection each morning by parents to see whether children are fit for school and free from suspicious observable signs; the daily inspection by the teacher of all pupils to determine whether they are in usual health and free from suspicious signs; and the exclusion from school of those who show any evidence of communicable disease as approved by the administrative authorities of the school. There should be in constant attendance in every school some person who is properly qualified, and authorized, to exclude pupils who show signs of health disturbance. Readmission to the school should be on the basis of impartial interpretation of uniform regulations as adopted by the school officials and acceptable to the local health authorities.

In general, if the child coming down with a contagious disease has been absent from school twenty-four hours or more before any signs of illness developed, then the room is not considered exposed. Otherwise, an exposure of some degree has taken place, the extent depending on the symptoms exhibited.

When it is discovered that one or more children in a class have been exposed to a contagious disease, immediate action should be taken. By means of a classroom immunity chart, school authorities should determine how many children in the class are nonimmune and are, therefore, likely to contact that particular disease. All parents of children in the room should be notified (usually by mimeographed letter) that an exposure has taken place, and requested to watch carefully for signs of health disorders. Parents, in turn, should notify the school at once if any child shows signs of illness. Physicians or parents should notify the Board of Health if the disease is contagious and reportable. In no case should a child be required to attend school against his parents' wishes when his class has been exposed to a contagious

disease or during an epidemic. If a room is not closed, it should be placed under the individual room quarantine plan. This particular room is then conducted as a separate school within a school. This plan permits the exposed class to attend school without danger to other pupils. When a pupil is suspected of having contagious disease such as measles, scarlet fever, etc., he should be separated immediately from other pupils and arrangements made to send him home. It may be desirable to have the desk and other fixtures which he has touched washed with soap and water.

Under the individual room quarantine plan the children come to school a few minutes later and leave five or ten minutes earlier than other pupils. They have their own recess periods, separate from the rest of the school and attend no assemblies or other exercises in which the rest of the school participates. They use only their own classroom. In the junior high schools, teachers meet such a class in its own room, and then go to other rooms for other classes. They are permitted to use regular toilets except at recess time when other groups use toilet rooms. The teacher is expected to make a careful health survey of the room each morning; and particularly in epidemics or where the disease is diphtheria, or scarlet fever, a further daily inspection of each pupil is made by the school nurse. Fumigation of the room is unnecessary, since it is aired thoroughly and as much sunlight as possible allowed to enter. In extreme cases, close the room for the rest of the day and leave the windows open all night, if this is practicable. Books have been considered important agents in the transmission of many diseases. Much of this theory has been disapproved. A thorough sunning of the books should meet most theoretical needs. In the event of smallpox, scarlet fever, diphtheria, poliomyelitis and meningitis, the books and other materials which the pupil has used and are the property of the school should be carefully wrapped by the janitor, properly marked, dated and placed aside in a *warm, dry* place for a period of six weeks, after which time they may be used. The property of the individual should be sent home if desired. If the books are the property of one of the public libraries, they should be carefully wrapped by the janitor nad properly marked, dated, and the library notified to call for them. The quarantine of the room is for the same number of days as the incubation period for the disease for which the room has been quarantined, at the end of which the room is released, provided no further exposure has occurred.

Dr. Walter S. Cornell, Director of Medical Inspection, Public

Schools, Philadelphia, Pa., states, "In addition to dismissal of classrooms, we employ the following procedures: 1. School physician examines all children in the school and especially children returning to school after absence. 2. Classroom desks and floors are scrubbed with disinfecting solution and classroom aired. 3. Kindergarten toys disinfected. 4. When cases in one school are numerous, the door knobs and the handrails on stairs are wiped twice daily with disinfecting solution. 5. All children with sore throats or returning to school with history of "sore throat" or "tonsilitis" (but no evidence of scarlet fever) are sent home, and excluded for a week or ten days as a general precautionary measure. 6. If a case of diphtheria occurs the classmates are throat cultured."

Cooperation between home and school is indispensable to successful school health work. Parents and school should jointly assume responsibility for the child rather than to shift the entire burden on either. The parents should keep at home children who have suspicious signs of contagious disease, and should telephone the schools in such cases to permit the school to take the necessary steps for the protection of the other children. Furthermore, parents should provide physician's certificates from the home in explanation of absences for illness or any other cause. The school should educate the parents in such matters, either by circulars or through meetings similar to those held under the auspices of the Parent-Teachers Association.

The school recommends that the parents note the early signs and symptoms of disordered health, for which children should be given immediate attention, such as nausea or vomiting, chills, fever, dizziness, or faintness, running nose with "watery eyes," cough, sore throat, rash of any kind and acutely swollen glands in the neck.

Protective measures in the home should include: (1) protection against contagious diseases by such means as immunization for smallpox and diphtheria and the Schick and tuberculin tests; (2) provision of a proper, healthful routine of living; (3) encouragement of those habits and practices which serve to protect the child from sickness; (4) provision for early discovery and correction of remediable defects and for treatment of defects which cannot be cured; and (5) avoidance of unnecessary exposure of any member of the family to disease, especially during epidemics, when children's parties are an all-too-effective means of spreading contagion.

The parents' duties in readmission are threefold: (1) pupils

should not be sent to school until readmission may reasonably be expected, in accordance with regulations; (2) if possible, especially with elementary school children, a parent or some other responsible person familiar with the case should accompany the child to school; and (3) all required certificates of health should be brought with, or by, the child.

Pupils can be taught to cooperate in disease control by careful observance of good health practices, including: (1) covering the mouth whenever they cough; (2) reporting to parents or teachers when they feel ill; (3) strict obedience of the health laws of the school and community; (4) the development of good health habits.

The value of school health service shows that this century has been marked by an unprecedented interest in the welfare of children, comparable indeed with the great periods in the past, of inspiration in art and literature. Municipal authorities are endeavoring to reach parents by such diverse means as school health service, visiting nurses, public lectures, health moving pictures, and health exhibits.

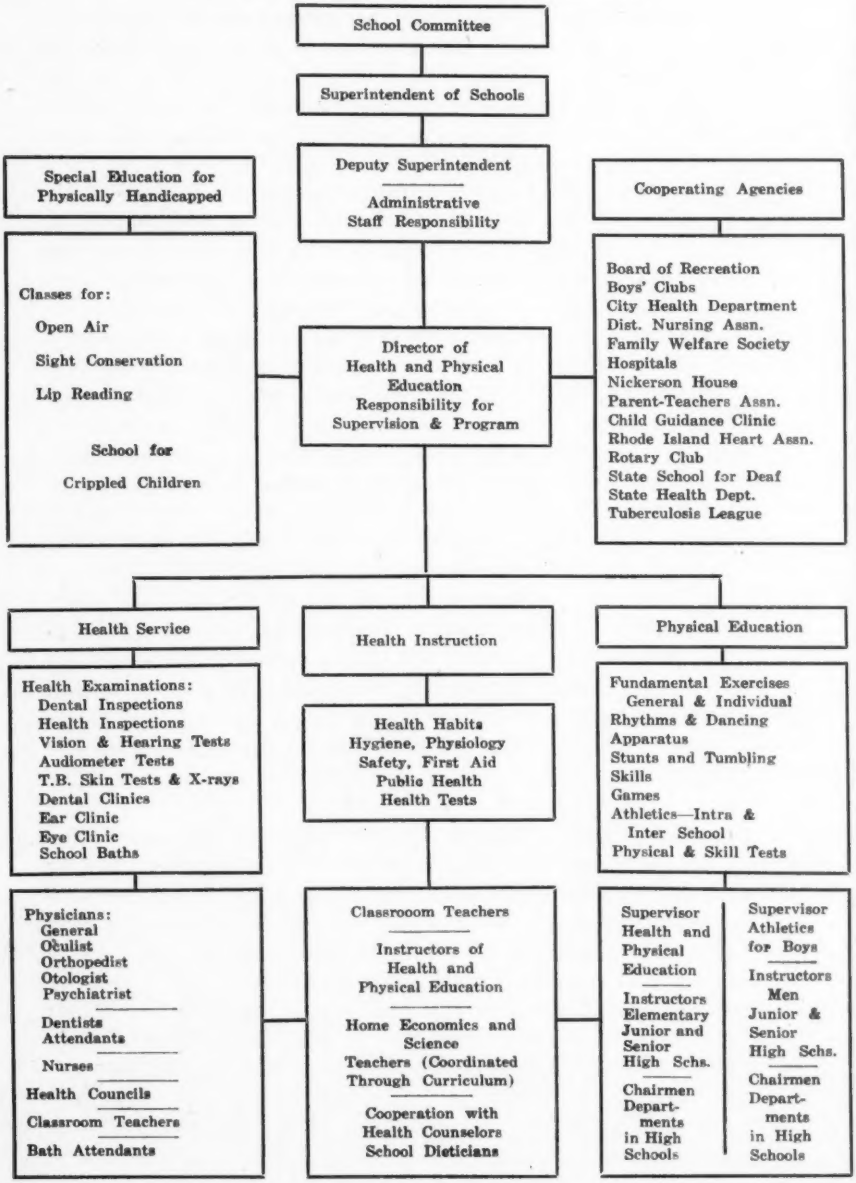
In the laboratory, in the clinics, doctors' offices, and health departments, people are working to improve public health. The public should understand the nature of disease, and why certain control measures are necessary. They should obey rules and regulations. They should go to or call the doctors to their homes when symptoms appear. Thus more people will get well, stay well, and live longer.

The realization of our highest ideals in education is to see in our children and our children's children a better race of men and women than we are or than our fathers were. In a word, health protection, guidance and service in the public schools will determine largely to what extent we may look to our children for the full reconstruction and the future strength of our nation.

* * * * *

Physical Therapy Aides, — Thirty-nine members of the Women's Army Corps recently completed physical therapy training of almost a year's duration, and were formally commissioned second lieutenants in the Medical Department of the Army. In nine army hospitals located in various sections of the country, these former Wacs were ushered into their official status with varying ceremonies. Strength of the physical therapy organization is less than a thousand aides at present, but an active recruiting effort is being made to increase this number. — Jour. A.M.A., July 22, 1944.

DEPARTMENT OF PUBLIC SCHOOLS
Providence, Rhode Island
Health and Physical Education
Chart Indicating Functions and Relationships



HEALTH SERVICE DURING PREVALENCE OF HIGHLY CONTAGIOUS DISEASE

The procedure during the prevalence (two or more cases) of a highly contagious disease such as scaret fever or diphtheria in a school room is as follows:

1. The room is not to be closed except in extreme emergency, but conducted on the Individual Room Quarantine Plan, as a separate school within a school. The decision will rest upon the results of a review of the health record cards of pupils and a statement as to the number of cases in question, those immunized and those susceptible. This permits the exposed class to attend school without danger to other pupils. Under this plan the pupils (a) come to school a few minutes later and leave five or ten minutes earlier than other pupils; (b) use only their own classroom; (3) have their own recess periods; separate from the rest of the school; (d) attend no assemblies or other exercises in which the rest of the school participates; (e) use toilets except at regular recess time.
   The quarantine of a room is for the same number of days as the incubation period for the disease for which the room has been quarantined, at the end of which time the room is released, provided no further exposure has occurred.
2. School nurse will:
   (a) Inspect all pupils and daily thereafter until end of incubation period of last exposure.
   (b) Culture all pupils and thereafter any who on inspection are suspicious cases.
   (c) Inspect pupils returning to school after absence due to illness.
   (d) Make home visits to investigate absence due to illness.
   (e) Make a classroom immunity statement to determine how many pupils are non-immune and are likely to contract the particular disease.
3. Teacher should constantly observe the pupils for any signs of contagion.
4. Pupils should be seated to avoid any close contacts. The use of floor rugs in the kindergarten should be omitted for rest periods.
5. Thoroughly ventilate room, admitting all possible sunlight, especially when not in use, also cleaning seat and desk involved with disinfectant solution.

6. The books and other materials which the pupil has used and are the property of the school should be carefully wrapped by the janitor, properly marked, dated and placed aside in a *warm, dry* place for a period of six weeks, after which time they may be used.
   The property of the individual should be sent home if desired. If the books are the property of one of the public libraries, they should be carefully wrapped by the janitor and properly marked, dated, and the library notified to call for them.
7. Parents of children in the room who have not had the disease should be (a) notified by Form H.S. 38, that an exposure has taken place, and requested to watch carefully for signs of health disorders; (b) informed and advised that children should not attend parties, dances, movies, etc.

This is to comply with the rules and regulations of the City Health Department, Providence, R. I. September 1914.

* * * * *

The Epidemic of Poliomyelitis,—The epidemic of infantile paralysis in the Eastern Seaboard states, which up to August 21 had taken six lives and had a total of 87 cases under treatment in Washington hospitals, has elicited advice from Dr. Betty Huse of the crippled children's service of the Children's Bureau, United States Department of Labor, that poliomyelitis patients may be safely admitted to the general wards of hospitals. She urged immediate hospitalization when the disease is suspected as a means of getting for the victim expert treatment, which can prevent crippling in many cases. Poliomyelitis cases need not be placed in separate wards, although it may be desirable to do so for ease in handling. It is essential that all precautionary measures be taken, particularly the disinfection of all excretions."

Dr. Huse said that there have been indications of an epidemic condition in New York, North Carolina, Kentucky, Virginia, Pennsylvania, Ohio, Indiana and Michigan, which thus far the Southern States, with the exception of the three named, had escaped. The Mountain and Pacific states, the West North Central states and the New England states are relatively "free" of cases of poliomyelitis.

It was pointed out that the Children's Bureau administers sosial security funds for the care of crippled children, which are being used for the care of poliomyelitis victims. Funds are available through state agencies and, as a matter of policy, care is given under the crippled children's program to those suffering from poliomyelitis without regard to the parent's ability to pay — Journal A.M.A., Aug. 26, 1944, p. 1198.

A MILD EPIDEMIC OF RINGWORM OF THE SCALP AMONG SYRACUSE SCHOOL CHILDREN

WM. E. AYLING, M.D.
Health Director

Early in the fall of 1943 it became apparent that a number of children were becoming affected by ringworm of the scalp. This was particularly noticeable in one section of the city, centering in the Washington Irving School district. This school is located in an area where the economic status of the people is rather low and many of the parents were negligent in carrying out the instructions for the treatment of this condition. Most of them could not afford the services of a private physician and were dependent upon the Syracuse Free Dispensary for treatment.

The doctor in charge of the Skin Clinic at the Dispensary found that the situation was growing worse in spite of all they could do, so he appealed to the School Health Service to give treatments in school. After a conference with the school authorities on January 27th it was arranged to employ the services of a special nurse to give these treatments at Washington Irving School. A letter, notifying the parents of this decision and offering to treat their children, was sent to them with instructions that they sign the attached request form and return it to the school.

The treatment, as outlined by the skin specialist in conjunction with the school doctor, was to clip the hair of the pupils around the involved area, shampoo the scalp with green soap and then treat each child twice daily with an ointment containing sulphur and salicylic acid.

At the time of beginning treatment on February 9th the number of cases had grown to 35, all but 7 of whom were boys. All cases had been diagnosed either at the Skin Clinic or by the school physicians and the treatments were carried on under the supervision of these doctors. Some were cured in about 26 days, although several required a longer period of time. A few cases were brought in from neighborhood schools. In all 51 cases, 42 boys and 9 girls received the treatment.

The children were allowed to attend school as soon as under treatment, provided each one wore a skull cap made out of a freshly laundered stocking. The parents provided these caps in most cases. Previously these children had been excluded from school and were missing their education, running the streets, attending movies and in other ways spreading the infection. By allowing them to come to

school under close supervision they received their education and considerable saving, amounting to several hundred dollars, in State Aid was effected.

At the present time, at the end of the school year, several pupils are being treated at school. They will be kept under observation by the school nurse during the summer months.

This is not a reportable disease in this city and very little publicity has been given it, due to the fact that the greatest incidence was only 51 cases out of a total registration of approximately 29,000 school children.

* * * * *

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THE DIABETIC CHILD AT SCHOOL

WALTER S. CORNELL, M.D.*

It is believed that approximately one hundred and forty diabetic children attend our Philadelphia schools, in the combined public, parochial, and non-sectarian private schools which have a total enrollment of about 340,000.

This belief is based on the results of a Survey of Chronic Diseases made in the years 1935-1936 by the United States Public Health Service. In an urban population of 2,502,391 there were 9,182 diabetics reported. This was ratio of 0.36%, or 3.67 per 1000, or 1 per 272.

The incidence of the disease, by age of the patient, was as follows:

Ages	Proportion of Diabetics to population
0—14 years	0.038% or 1 : 2600
10—24 years	0.059% or 1 : 1700
25—34 years	0.100% or 1 : 1000
35—44 years	0.261% or 1 : 380
45—54 years	0.656% or 1 : 150
55—64 years	1.425% or 1 : 70
64 and older	1.839% or 1 : 54
For all ages	0.367% or 1 : 270

From the above figures, assuming 9/13 of the school children to be in the bracket 0-14 years and the other 4/13 to be in the bracket 15-24 years, the incidence of diabetes in the entire school child group is calculated as 1 to 2300, or 0.043%, or 0.13 per 1000. This means 105 diabetic children in the public schools, with enrollment of 250,000, and 35 in the other schools of the city.

The identity of all of the diabetic school children is not known to their teachers or to the school physicians. The mothers of the younger children usually notify the teachers of the situation, and some of the high school pupils similarly inform the teachers or the school physician at the time of the annual examination. In the high school age, there is an inclination on the part of some diabetic pupils to conceal their condition on the ground that it is nobody's business, the condition is under control, and if known would possibly cause restrictions in student activities which the student wishes to pursue.

The question arises: Should the routine school medical examination go beyond the present limited physical examination to include a urinalysis? Our opinion, or at least our impression, is a qualified "No," on the ground that the expense would be too great

* Formerly Director of Medical Inspection, Public Schools, Philadelphia, Penn.

for the information obtained.

School physicians, army physicians, and industrial physicians, through training and experience acquire the ability, when helped by systematic procedures, to perform physical examinations with more than usual skill and rapidity. Our Philadelphia school physicians each year examine some 250,000 pupils and discover some 215,000 major conditions (including 100,000 cases of dental decay) and some 25,000 minor skin or eye conditions, or cases of acute illness which need treatment. These 250,000 physical examinations require an average of seven minutes each at a cost of 30 cents, and the 240,000 diseases and physical defects discovered evidently about 31 cents each to discover them. We submit that it is certainly worth 31 cents for the child's future health to learn that the child needs eyeglasses, dental care, or treatment for diseased tonsils, for 20% of all children need glasses for close work, more than three-fourths suffer from dental decay, at least five per cent have had nose and throat conditions and eight per cent suffer from evident poor nutrition.

We could not say the same in the case of urinalyses done at school. Apparently they would consume a full seven minutes each with a consequent cost of 30 cents each. We should say that we are thinking now of sugar determinations only, using one of the rapid chemical methods to heat the urine. The total cost would be 250,000 children multiplied by 30 cents, or $75,000. This would reveal the identity of the 105 diabetic pupils at a cost of more than $700 per revelation. But actually more than one-half of these children would not be revealed because they would be known already. It should be remembered that diabetes in children is not a disease of slow and usually unsuspected onset as it is in adults. It usually comes on rapidly with signs and symptoms which cause the parent to take the child to a physician early in the disease.

Possibly the school medical examinations of the future will include urinalyses and X-Ray examinations of the chest where there is either diabetes or tuberculosis in the child's family. Diabetes or susceptibility to diabetes under certain conditions is largely a hereditary condition. Pulmonary tuberculosis occurs ten times as frequent where there has been family exposure to the disease in childhood. The parent of each child might well be questioned when the child first enrolled in school regarding diabetes or tuberculosis in the family, and those children with positive histories might well have urinalyses or X-Ray examinations of the chest at definite intervals through school life.

Are diabetic children different from other children, and if so in what way? Dr. Priscilla White, who is an authority on diabetes in children, calls attention to the fact their average height is slightly greater than that of other children, and the average bone development, dental development, and adolescent sex development, are advanced by approximately one year. All these conditions are possibly the result of some underlying pituitary gland factor. The average diabetic child is of good intelligence and, we presume, somewhat sobered beyond his years by knowledge of his condition and the prospect of taking insulin during the years to come.

The diabetic child, so to speak, skates on ice the thickness of which depends on the skill of the attending physician and the faithfulness with which the child and its parent obey medical instructions. The factors that must be considered are quite numerous. Dr. White includes consideration of the blood sugar, blood cholesterol, urinary sugar, urinary ketones; also the child's weight should be normal, there should be no symptoms of diabetes, and the child should show normal interests and activities. The term activities deserves some definition. The diabetic child should have normal outdoor play and exercise, but care should be taken that the exercise is neither neglected or carried to the point of strenuous over-activity.

Insulin reactions may occur to diabetic children, and every diabetic child or its parent should be careful to inform the school principal and the class teacher that the child is taking insulin, that it is possible that some insulin reaction may occur some day, and that the child is to be given sugar in that event. When hyperinsulinism causing hypoglycemia occurs some time after administration, the child usually knows it through the feeling of weakness and nervousness, and is able to administer the sugar itself. There may be an occasion, however, when the child has a strong insulin shock with unconsciousness. Then the teacher must get the sugar down the child's throat. A few teachers are squeamish. Others naturally worry whether they will be held responsible if anything goes wrong with the child.

The squeamish teacher can always get help from one near by who is of sterner stuff, and who is not afraid to handle an unconscious person.

The cautious teacher basically is right. The first aider must be careful not to run into a damage suit—something that did not happen to the first Good Samaritan but has occasionally happened to his successors. When a diabetic child's mother asks the child's teacher to give sugar in case of insulin shock, she should give to the

teacher a written request to this effect signed by the attending physician with assurance by the physician that the administration of sugar will not be harmful to the child in any event; furthermore the mother should write her own request for teacher help when needed, including the statement that the teacher will not incur any responsibility by this action.

Let us suppose that a diabetic child attends school without knowledge by the teacher of the condition. Difficulty of speech, pallor, sweating, listlessness, may occur. The child may seem dazed. Sometimes its conduct is peculiar by reason of unexpected and uncalled for words or actions. In more rare cases the child may become unconscious or suffer a convulsion. The alert class teacher should think of epilepsy and of insulin shock, although all of the signs just mentioned do not occur in epilepsy.

The possibility of diabetic coma occurring in a school child while in school cannot be denied, but is extremely unlikely, and I do not recall ever hearing of such a case. It is not worth while reviewing the condition for the purpose of this paper. The teacher, who is not a doctor, should be positively assured that even if the unconscious child were to suffer from diabetic coma, the administration of sugar called for in case of insulin shock would at least do no harm.

Finally, a few words may be said from the standpoint of the public health officer. The diabetic child should be taught from the beginning that heredity is a most powerful factor in this disease. During the age of school life, careful diet, careful exercise, and careful administration of insulin, are of paramount importance. When he finishes school, he should choose an occupation where an insulin reaction does not constitute a definite hazard to himself or to others. He should determine (and she should determine) to choose a wife (or husband) who comes from a non-diabetic family, in order to minimize the probabilities of diabetes in the next generation.

The non-diabetic child who comes from a diabetic family should be taught that he may develop diabetes in later life, especially if he permits himself to become overweight. He, too, should be taught that diabetes (or organic weakness predisposing to diabetes) is often hereditary, and informed of the genetic advantages gained by marrying a girl from a "non-diabetic" family. There are, however, practical limits to the public health program. Love laughs at Mendel . . . but may, as a compromise anti-diabetic measure, resolve to remain as sylph-like in December as it is in May.

—Reprinted from The Diabetic Digest, Vol. III, No. 1, 1944.

AMERICAN SCHOOL HEALTH ASSOCIATION ANNUAL MEETING, NEW YORK

October 2 to 5, inclusive, 1944

Monday, October 2, 1944—

2:00 P.M., FIRST GENERAL SESSION, *Roof Garden, Hotel Pennsylvania.*

Presiding—C. MORLEY SELLERY, *President,*
Director of Health Service Section, Board of Education,
Los Angeles, California

Present Day Trends in School Health Practice:

1. *School Nursing Policies and Practices in Relation to School Health.* MISS GERTRUDE E. CROMWELL, R.N., Supervisor, Health Education and School Nursing, Des Moines, Iowa.
2. *The School Physician's Approach to School Health Service.* JOHN BURKE, President, New York State School Physicians' Association, Schenectady, N. Y.
3. *Physical Condition of Soldiers at Induction—What the Schools Might Do to Overcome Defects Shown.* HENRY F. MACE, M.D., State Department of Education, Albany, N. Y.
4. *Integration of Community Health Education and School Health Education.* SUE HURST THOMPSON, M.D., Acting Commissioner of Health, Columbia County, Hudson, N. Y.
5. *Rheumatic Fever as a Significant Finding.* (Speaker and discussants to be announced.)

8:30 P.M., SECOND GENERAL SESSION—*Roof Garden*

Presiding: S. B. MCPHEETERS, M.D., Director of Public Health, Wayne County Health Department, Goldsboro, N. C.

C. MORLEY SELLERY, M.D., Director, Health Section, Board of Education, Los Angeles, California.

Importance of School Health in a War-Time World or Impact of War on the School Health Program:

1. *The Results of the Course in Health and Human Relations for Teachers.* HUBLEY R. OWEN, M.D., Division of Medical Service, Board of Public Education, Philadelphia, Pa.
2. *The School's Responsibility for Mental Health as Revealed by War.* GEORGE K. PRATT, M.D., Medical Director, Connecticut Society for Mental Hygiene, Westport, Conn.
3. *The Classroom Teacher Relates the Health Program to War-time Needs.* MISS MARIE SWANSON, Supervisor of School Nursing, University of the State of New York, State Education Department, Albany, N. Y.
4. *Administrator's Viewpoint on the School Health Program.* EUGENE B. ELLIOTT, Superintendent, Department of Public Instruction, Lansing, Mich.
5. Presentation of Wm. A. Howe Awards.

Wednesday, October 4, 1944—

9:30 A.M., JOINT SESSION—*Salle Modern*

PUBLIC HEALTH EDUCATION SECTION, A.P.H.A.
SCHOOL HEALTH SECTION, A.P.H.A.
AMERICAN SCHOOL HEALTH ASSOCIATION
Presiding: CHARLES C. WILSON, M.D.

Contribution of Public Health Workers to the Health Preparation of Teachers:

New Developments in Teacher Education (with Implications for Health Preparation.) MAURICE TROYER, PH.D.

New Developments in Education of Public Health Personnel for School Health Work.

(a) *Summary of Report of Committee on Qualifications of School Physicians.* GEORGE M. WHEATLEY, M.D.

(b) *Preparation of Public Health Nurses.* RUTH FREEMAN, R.N.

(c) *Preparation of Public Health Dentists.* KENNETH A. EASLICK, D.D.S., University of Michigan, School of Dentistry, Ann Arbor, Michigan.

(d) *Preparation of Public Health Educators.* LUCY S. MORGAN, PH.D., Professor of Health Education, University of North Carolina, Chapel Hill, N. C.

2:00 P.M., JOINT SESSION—*Roof Garden*

FOOD AND NUTRITION SECTION, A.P.H.A.
DENTAL HEALTH SECTION, A.P.H.A.
AMERICAN SCHOOL HEALTH ASSOCIATION

Presiding: DONALD K. TRESSLER, PH.D., KENNETH A. EASLICK, D.D.S., LON W. MORREY, D.D.S.

Good School Health as a Continuous Need:

New Trends of Various Public Health and Nutritional Activities in a School Program. J. T. PHAIR, M.B., D.P.H.

Integrating Nutrition Education and Activities in a School Program. MARGARET CHANEY, PH.D.

Nutrition and the Oral Tissues. MAURY MASSLER, D.D.S., M.S.

A Workable Public Health Dental Program. J. M. WISAN, D.D.S.

Thursday, October 5, 1944—

2:00 P.M., JOINT SESSION—*Roof Garden South*

AMERICAN SOCIETY FOR RESEARCH IN PSYCHOSOMATIC PROBLEMS
SCHOOL HEALTH SECTION, A.P.H.A.
AMERICAN SCHOOL HEALTH ASSOCIATION
PHYSICAL FITNESS AND HEALTH PROBLEMS OF THE ADOLESCENT

Chairman: LAWRENCE N. FRANK, PH.D.

"*Physiological and Emotional Problems of Adolescence.*" LAWRENCE FRANK, New York City.

"*Health Service in a High School, What It Can Offer.*" WILLIAM SCHMIDT, M.D., Regional Medical Consultant, Children's Bureau, Washington, D. C.

Discussant: COL. LEONARD ROWNTREE, Selective Service System, Washington, D. C.

"*Presentation of Case Material.*" J. ROSWELL GALLAGHER, M.D., Director of Health Service, Andover Academy.

Discussant: NORMAN MOORE, M.D., Director of Health Service, Cornell University.

GOVERNING COUNCIL MEETINGS:
ASSOCIATION HEADQUARTERS, HOTEL NEW YORKER

SUNDAY, OCTOBER 1	**7:30 P.M.**
MONDAY, OCTOBER 2	**10:00 A.M.**
TUESDAY, OCTOBER 3	**4:30 P.M.**
WEDNESDAY, OCTOBER 4	**4:30 P.M.**

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EDITORIAL

As the new school year begins, the most urgent problem is that of poliomyelitis, particularly in those sections of the country where the rate has been exceedingly high.

Shall the schools open just after Labor Day or shall they remain closed for an extra fortnight or more? Boards of Education are bombarded by arguments, letters, and newspaper comments, most of them based on little real knowledge of public health or control of epidemics, especially any epidemic of this disease about which even the best informed epidermiologists have so little accurate scientific information.

In the area of western New York state, where the case rate has been extremely high, the emergency has served to emphasize one thing at least: namely, that for child protection from communicable disease a thoroughly organized scientifically directed and led school health service is an essential.

Among other things, this means a staff of sufficient size and of such scheduling that either a school physician or a school nurse —preferably both—may get into every school every day. Niggardliness or inefficiency that prevents this has much to answer for. Public opinion should force Boards of Education and the tax levying bodies to take a more modern and a more protective attitude.

With the use of the daily visit some protection is possible, cer-

tainly more than is given by the do-nothing policy of closing the schools, while other places where children congregate remain open. Every child should be seen by a nurse or doctor during the first day of school. For such an emergency it should be possible to secure temporary help from sources outside the schools or health department. With the aid of the teachers, a short history should be taken. Any history or evidence of any recent illness, even if slight, should mark that child for a more intensive examination.

It is no defence to say that this will disorganize the classes. Of course it will, but much less than closing the schools or dragging along for weeks with scattered cases due probably to carriers that might have been found by more intimate inspection and supervision. Nor is it a defence to say it can't be done. This is a confession either that the staff is inadequate in size, poorly qualified for its job, or poorly led. Perhaps the best answer to "It can't be done" is the fact that it has been done.

Until we know more about how this disease is spread, the best guard against it is better care and supervision. Elsewhere in this Journal are two sets of directions for protection, one issued by the National Foundation for Infantile Paralysis and the other by a special committee of a County Medical Society which has given this epidemic special study from the epidemiological point of view.—C. H. K.

* * * * *

ABSTRACTS

When Polio Strikes,— June through September is the season when infantile paralysis generally is on the upswing in the United States. The National Foundation for Infantile Paralysis has compiled the following suggestions which will be helpful to residents of areas where poliomyelitis is on the march.

1. During an outbreak of infantile paralysis be alert to any signs of illness or changes in normal state of health, especially in children. Do not assume that a stomach upset with vomiting, constipation, diarrhea, severe headache or signs of a cold and fever are of no importance. These may be among the first symptoms of infantile paralysis. All children and adults sick with unexplained fever should be put to bed and isolated pending medical diagnosis.

2. Don't delay calling a physician. Expert medical care given early may prevent many of the crippling deformities. Proper care from the onset may mean the difference between a life of crippling and normal recovery.

3. Today there is no known prevention or protection against

infantile paralysis. All that can be done to provide the best possible care. Your doctor, your health officer and your local Chapter of The National Foundation for Infantile Paralysis can and will do everything in their power to see to it that your community is ready to meet an epidemic.

4. Observe these simple precautions:
   (a) Avoid overtiring and extreme fatigue from strenuous exercise.
   (b) Avoid sudden chilling such as would come from a plunge into extremely cold water on a very hot day.
   (c) Pay careful attention to personal cleanliness, such as thorough hand washing before eating. Hygienic habits should always be observed.
   (d) If possible avoid tonsil and adenoid operations during epidemics. Careful study has shown that such operations, when done during an epidemic, tend to increase the danger of contracting infantile paralysis in its most serious form.
   (e) Use the purest milk and water you can. Keep flies away from food. While the exact means of spread of the disease is not known, contaminated water and milk are always dangerous and flies have repeatedly been shown to carry the infantile paralysis virus.
   (f) Do not swim in polluted water.
   (g) Maintain community sanitation at a high level at all times.
   (h) Avoid all unnecessary contact with persons with any illness suspicious of infantile paralysis.

5. Don't become hysterical if cases do occur in your neighborhood. While infantile paralysis is communicable or catching during any outbreak, there are many who have such a slight infection that there are few or no symptoms. This large number of unrecognized infections is one of the reasons there is no practical way of preventing the spread of the disease. But it is also reassuring to know that, of the many persons who become infected, few develop serious illness and that, with good care, the majority who are stricken will make a satisfactory recovery. Remember that although this is a frightful disease, needless fear and panic only cause more trouble.

6. Attempts to stop the spread of the virus by closing places where people congregate have been uniformly unsuccessful. The resulting disturbance to community life is a disadvantage. Today there is no way by which the spread of infantile paralysis can be completely stopped.

7. There is no known cure for infantile paralysis. Good medical care will prevent or correct some deformities. But, in about every fourth or fifth case there will be permanent paralysis that cannot be overcome. Do not believe those who for one reason or another promise to cure these cases. Be guided by sound medical advice if polio does strike in your family.

8. In almost all the counties of the United States there are local Chapters of The National Foundation for Infantile Paralysis prepared to help health officers, doctors, nurses, hospitals and patients in every way possible. These Chapters stand ready to assist the entire community. Know your Chapter—ask its help if needed—and volunteer to help your Chapter so that it will be able to render the necessary services. — Bulletin, The National Foundation for Infantile Paralysis, 120 Broadway, New York 5, N. Y.

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Poliomyelitis,—The following recommendations were given by the Public Health Committee of the Medical Society of the County of Erie (New York) at a meeting held in the Medical Society office, Friday, August 4th:

1. All public swimming and wading pools should be closed Private pools should be restricted to adult use.

2. Children should be kept out of all crowds and points of congregation—theaters, sports events, outings, boat rides, beaches, trains, buses, trolleys, etc.

3. Outside eating should be avoided because of the prevalence of flies.

4. Unpasteurized milk and well and spring water should be boiled.

5. Homes, restaurants, taverns, hotels and stores should keep all food screened or under glass to avoid contamination by flies and other insects.

6. Children should be kept from over-eating and over-playing during the hot weather, because fatigue lowers resistance against all forms of disease. Consumption of ice cold drinks should be limited.

7. Parents should make sure children get an adequate amount of rest. Young children should be encouraged to take brief naps in the afternoon.

8. Youngsters should not be permitted to associate with other children obviously ill, regardless of how trivial that illness appears. Running noses, sore throats, glandular disorders or muscular ailments may be dangerous.

9. Alarm, hysteria, fright and panic should be avoided. Don't get the notion that emigration from the city will help. When the disease strikes, no locale is immune. In fact, Buffalo's rate is lower than that in the rural areas of the county.

10. Surgery on children—tonsils, adenoids, appendix, hemorrhoids, teeth extraction—should be delayed if possible until the polio danger subsides. Raw mucous surfaces may offer a virus a point of entry.

* * * * *

Nutrition,—We all know that the most common cause of poor nutrition in the school child is insufficiency of proper food. In the last two decades of life, this is not the case. Cardiovascular disease, kidney disease, diabetes, and cancer are in the mind of the physician as he makes his first examination of the elderly person suffering from loss of flesh and strength.

The Philadelphia school nurses every year report on the personal hygiene of about two thousand undernourished pupils who have been given special care in so-called health instruction groups, and about four hundred more who have been cared for in special nutrition classes where a full feeding program and a daily rest period are provided.

From a statistical summary of the school nurses' reports, it is evident that insufficient rest, worry, and other causes of nervous exhaustion operate as frequently to depress the health of these children as does insufficient food. Twenty-three per cent get insufficient rest at night. There are home factors causing worry in 17 per cent, and lack of home discipline and poor co-operation by the mother in about 14 per cent. About 45 per cent of the undernourished pupils given special attention by our school nurses come from poor homes, and the adverse conditions just mentioned are twice as common as in the nonpoverty group. In a small fraction there is a history of rheumatism, chorea, or kidney disease, while 8 per cent have diseased tonsils and 41 per cent have carious teeth. We should always bear in mind that the cause of the existing poor nutrition is vastly more important than its degree in the case of a child who is physically able to attend school.

If the question is asked, how many of our undernourished school pupils come from families in which there is insufficient money to purchase proper food, we can quote from an investigation made by the Philadelphia school nurses seven years ago. A survey of 500 cases, just as they came to hand, and scattered over the entire city, showed the extreme poverty existed in 45 per cent of all cases, meaning that in this group the family consisted of an

average of 6.4 persons, with an average family income of $15.01 per week.

Dire poverty is not so prevalent today in our Philadelphia children who suffer from poor nutrition, because of the upswing of employment due to war industries. In January, 1942, the Board of Education undertook to provide school meals for all undernourished-underprivileged pupils, with foods supplied by the Federal Surplus Marketing Administration, $100,000 to buy food supplied by the city of Philadelphia, and kitchen service supplied by the National Youth Administration. The school authorities estimated that 6000 to 8000 children would be fed daily. Actually the number never exceeded 3900. If we add 500 undernourished - underprivileged pupils whose parents for various reasons refused to accept the offered free school lunches, the number of the undernourished - underprivileged would be about 4500, or about 22 per cent of the entire number of undernourished children, in these times of prosperity of industrial workers.

For many years, the Board of Education of Philadelphia has maintained a limited number of nutrition classes, with enrollment therein of about 400 children. A generous noonday meal is provided, together with milk in midmorning, and the fuel value is about 1800 calories a day. There is also a school rest period in the morning. These classes probably would have been abandoned long ago, but for the fact that almost all of the children cannot get enough food at home because of poverty. We know that school children gain about five pounds in weight a year, with a temporary gain of ten pounds a year in the adolescent period. Most of the children in our nutrition classes are between 9 and 14 years of age. In this mixed group, the average expected gain would probably be about seven or eight pounds a year. We manage to accomplish a gain of about ten pounds in the ten school months—a little better than the ordinary natural gain for a child in good health. Our difficulty rests largely with conditions in the children's homes. In contrast to these meager results for much money and effort, we see undernourished children, who are sent to Camp Happy, the municipal Summer camp, gain an average of five pounds in three weeks under the influence of good food, sunshine, afternoon rest hours, free happy play, and regular sleeping hours.

In February, 1942, more or less discouraged because our nutrition classes had not produced startling results—despite the frequent handicaps of poor human stock and adverse home conditions—we yielded to the impulse to give more and better food to some of the pupils in the hope that better clinical results would be obtained. In

three nutrition classes the children were given all the milk they could, or would, drink while in the school house. In two of these three nutrition classes, each child was given daily a capsule containing various vitamins. In the third class the children received cod liver oil instead of the multiple vitamins. In the other thirteen nutrition classes, the children continued to receive the regular ration, consisting of a cooked meal of good nutritious foods and a total of one pint of milk with a fuel value, as stated earlier in this paper, of about 1800 calories.

We believe that the extra food elements must have been beneficial, but the benefit could not be demonstrated by such a simple method of estimation as plain gain in weight.—Walter S. Cornell, M.D., The Pennsylvania Medical Journal, Feb. 1943, The Nutritional Condition of Philadelphia School Children, Abstract of reprint, by C. H. Keene.

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Oiled Floors to Control Respiratory Infection.—Anderson and his associates investigated the oiling of floors to see if it could be used to cut down the spread of air borne infections among soldiers in barracks. The experiment involved men in two army units, A and B, each of which was a large training center occupying one complete barracks. Oiling of floors was carred out in unit A, while in unit B, which served as a control, the floors were untreated. The two barracks were almost identical in structure, and the men in the two lived and worked under closely comparable conditions. In unit A the wooden floors of all barracks rooms, sleeping huts, offices and lecture rooms were treated with spindle oil at regular intervals. The oil was applied in such a way as to leave an imperceptible film on the surface after thorough impregnation of the wood. Oil treatment of the floors of unit A began in November 1942. The oil was noninflammable and caused no unpleasant smell. The surface dried in about six hours. One gallon of it was enough to treat about 1,000 square feet of floor space. Second and subsequent applications were made at intervals of about four weeks. After treatment the floor was not scrubbed but was easily kept clean by brushing or occasional moppings with a rag moistened in oil. The floors of unit B—the control unit—were left untreated, and in both units careful weekly records were kept of all men reporting sick with a respiratory infection during the seventeen weeks ended March 27, 1943. In the unit where floors were oiled the average rate of respiratory infections was 7 per thousand men, as against 38 per thousand men in the control unit. No major outbreak of respiratory infection appeared in the test unit; in the control unit an outbreak of almost epidemic proportions prevailed between the middle of February and the first week of March. — Journal A.M.A., Aug. 26, 1944, p. 1215.

NOTES

Savings,—Diphtheria is a good example. In 1900 it killed 43 out of every 100,000 people. Of course if they'd just counted children the rate'd been a bit higher, because most of the deaths were children. In 1940 the rate was about one per hundred thousand. That represented a reduction of 97 per cent. If the diphtheria death rate in 1940 had been the same as it was in 1900 there'd have been 55,439 more deaths than there actually were. If you took the rate for each of the last 20 years, say, and figured the number of lives saved from just that one disease, the total—well, I wouldn't go so far as to say it'd look like the national war budget but it'd be a considerable figure.

That saving was the net result of the cooperation of several individuals and groups. It began when, in research laboratories over on the Other Side, antitoxin was developed. Doctor Biggs, when he was connected with the New York City health department, brought the first antitoxin to this country. The public health laboratories began making it and distributing it free for the doctors to use. Then Doctor Park and other health department laboratory people developed toxin-antitoxin for the prevention of diphtheria. That led to our present toxoid, that's simpler and better. Getting enough young children immunized to stop the epidemics: laboratories, health officers, nurses, practicing physicians, and private organizations—they all had a part.

Typhoid fever (nearly 46,000 lives saved in one year) it was largely the work of engineers, getting water supplies cleaned up, plus control of typhoid carriers, immunization and so on. Cutting down diarrheal diseases, that used to kill so many babies—it was pasteurization of milk mostly. "Who done it?"—after all that ain't so important. The big thing is all of us that have responsibilities meeting 'em in future so there won't be any more "cock robins" killed unnecessarily. — Paul B. Brooks, M.D., Health News, New York State Department of Health, Aug. 7, 1944, page 140.

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Personal,—Dr. Edith Gardner Mead, member of the Poughkeepsie Board of Health, has been appointed full time Medical Supervisor of the Poughkeepsie school system to succeed Dr. Helen J. Palliser who served on a part time basis.

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MEETINGS

American School Health Association and American Public Health Association, New York, N. Y., October 2 to 5, 1944. Headquarters American School Health Association, Hotel New Yorker. Make reservations at once.